

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

EQUISTAR CHEMICALS, LP, *et al.*

vs.

**WESTLAKE CHEMICAL
CORPORATION**

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CIVIL ACTION NO. 6:14CV68

MEMORANDUM OPINION AND ORDER

Plaintiffs Equistar Chemicals, LP and MSI Technology, LLC allege infringement of U.S. Patent No. 7,064,163 (the “ ‘163 Patent”), by Defendant Westlake Chemical Corporation. The undersigned conducted a *Markman* hearing on January 29, 2015. This Memorandum Opinion construes the disputed claim terms in the ‘163 Patent.

BACKGROUND

The ‘163 Patent, entitled “Polyolefin-based Adhesive Resins and Method of Making Adhesive Resins” relates to a method of making polyolefin-based adhesive resins, which are used for bonding to or bonding together polyolefins and polar materials. ‘163 Patent, col. 1, ll. 16–19. The ‘163 patent discloses a process to make adhesive resins by mixing an un-pelletized polyolefin with a graft polymer in a heated mixing device. The Abstract of the ‘163 patent recites:

A method for producing polyolefin-based adhesive resins having improved physical and optical properties and the improved adhesive resins thereby produced, eliminates at least one reheating and melting of polyolefin polymer, comprises polymerizing a monomer composition of at least one olefin, mixing the polymerization product without pelletizing the polyolefin polymer with at least one graft polymer or copolymer in a heated mixing device at a temperature above the melting point of the components, and recovering the resulting polyolefin-based adhesive resin.

Claim 1 of the '163 patent states:

A method for producing improved polyolefin-based adhesive resin, comprising:

- a. polymerizing a monomer composition of at least one olefin to a pelletizable polyolefin;
- b. mixing with shear mixing, while minimizing cross-linking, at least 50% by weight based on the polyolefin-based adhesive resin of the polymerization product following polymerization without first pelletizing the pelletizable polyolefin with at least one graft polymer or copolymer in a heated mixing device at a room temperature above the melting point of the components; and
- c. recovering the resulting polyolefin-based adhesive resin.

APPLICABLE LAW

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Court examines a patent’s intrinsic evidence to define the patented invention’s scope. *Id.* at 1313–1314; *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). Intrinsic evidence includes the claims, the rest of the specification and the prosecution history. *Phillips*, 415 F.3d at 1312–13; *Bell Atl. Network Servs.*, 262 F.3d at 1267. The Court gives claim terms their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

Claim language guides the Court’s construction of claim terms. *Phillips*, 415 F.3d at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Other claims, asserted and un-asserted, can provide additional instruction because “terms are normally used consistently throughout the patent.” *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.ed.2d 577 (1996)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the specification, a patentee may define his own terms, give a claim term a different meaning that it would otherwise possess, or disclaim or disavow some claim scope. *Phillips*, 415 F.3d at 1316. Although the Court generally presumes terms possess their ordinary meaning, this presumption can be overcome by statements of clear disclaimer. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343–44 (Fed. Cir. 2001). This presumption does not arise when the patentee acts as his own lexicographer. *See Irdeto Access, Inc. v. EchoStar Satellite Corp.*, 383 F.3d 1295, 1301 (Fed. Cir. 2004).

The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. For example, “[a] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” *Globetrotter Software, Inc. v. Elam Computer Group Inc.*, 362 F.3d 1367, 1381 (Fed. Cir. 2004) (quoting *Vitronics Corp.*, 90 F.3d at 1583). But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); *see also Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patentee may define a term during prosecution of the patent. *Home Diagnostics Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”). The well-established doctrine of prosecution disclaimer, “preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Omega Eng’g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). The prosecution history must show that the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during prosecution to obtain claim allowance. *Middleton Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002); *see also Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 994 (Fed. Cir. 2003) (“The disclaimer . . . must be effected with ‘reasonable clarity and deliberateness.’”) (citations omitted). “Indeed, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover.” *Spectrum Int’l v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed. Cir. 1988) (quotation omitted). “As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public’s reliance on definitive statements made during prosecution.” *Omega Eng’g, Inc.*, 334 F.3d at 1324.

Although, “less significant than the intrinsic record in determining the legally operative meaning of claim language,” the Court may rely on extrinsic evidence to “shed useful light on the relevant art.” *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the Court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly,

expert testimony may aid the Court in determining the particular meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.” *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

DISCUSSION

I. Agreed Terms

The parties have agreed to the construction of the following terms:

Term	Agreed Construction
“pelletizable”	“capable of being formed into pellets”
“shear mixing”	“employing extrusion equipment to mechanically generate significant frictional shear forces such that the components melt and combine”

II. Disputed Terms

a. “while minimizing cross-linking, . . . following polymerization without first pelletizing the pelletizable polyolefin” (Claims 1 and 17)

Term	Plaintiffs’ Proposed Construction	Defendant’s Proposed Construction
“minimizing cross-linking”	<i>See entire disputed phrase.</i>	“reducing to the smallest extent or degree of cross-linking”
“following polymerization”	<i>See entire disputed phrase. [“in an in line process”]</i>	“next in order after polymerization”
“without first pelletizing the pelletizable polyolefin”	<i>See entire disputed phrase.</i>	“polyolefin in the form of powder, granules, fluff, slurry, molten, virgin, and other non-pellet form”

“while minimizing cross-linking, ... following polymerization without first pelletizing the pelletizable polyolefin”	“while minimizing cross-linking,...in an in line process without first pelletizing the pelletizable polyolefin”	<i>See constituent terms.</i>
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Plaintiffs assert that the phrase should be construed as a single, connected phrase and should include the insertion of “in an in line process” for the phrase “following polymerization.” Defendant seeks to break it down into three separate terms.

Regarding “minimizing cross-linking,” the dispute revolves around the meaning of “minimizing.” Defendant argues that “minimizing cross-linking” means that all or nearly all crosslinking should be removed from the claimed process. Plaintiffs assert that elimination of crosslinking is impossible and the specification teaches that the disclosed process results in “less crosslinking.” *See* ‘163 Patent, col. 4, ll 1–4 (“Polyolefin-based adhesive resins produced according to the invention have less degradation, less crosslinking and better (whiter) color than conventional polyolefin-based adhesive resins having more extensive heat histories.”). Defendant’s construction of “minimizing cross-linking” excludes the preferred embodiment of the ‘163 Patent and is inconsistent with the specification.

Defendant further argues that the prosecution history shows the Applicant analogizes “minimizes” with “eliminates,” “avoids,” and “absence of.” ECF 43, p. 13. The Court disagrees. Instead, the Applicant proposed, but did not adopt, alternative amendments to the claims instead of the word “minimizing,” such as requiring an “absence of cross-linking” and “avoiding cross-linking.” *See, e.g.*, January 20, 2005 Amendment and Response at p. 10. That the Applicant chose “minimizing” as opposed to “absence of cross-linking” and “avoiding cross-linking” supports Plaintiffs’ position that it should not be limited in that manner and that these terms have different meanings. In contrast to Defendant’s proposal, “minimizing” does not

require or mean “reducing to the smallest extent or degree.” “Minimizing” is a simple term that is readily understood to a jury.

The disagreement concerning “following polymerization” revolves around whether “in an in line process” should be added. Plaintiffs argue that the specification is consistent with an in-line process and includes a disclaimer limiting it to an in-line process. Specifically, Plaintiffs point to two places in the specification:

- “The process of the invention reduces the number of melt extrusion and pelletizing steps for the ungrafted polyolefin portion of the adhesive from two to one. The only melt extrusion and pelletizing seen by the polyolefin occurs in the reactor’s existing in-line mixing device after synthesis of the polyolefin, after it is blended with the graft copolymer.” ‘163 Patent, col. 3, ll. 58–62.
- “The LLDPE polymerization product with a density of 0.918 g/cc was then discharged from the reactor in the form of a powder and fed into an accumulator bin in line with the reactor . . .” ‘163 Patent, col. 5, ll. 60–63.

According to Plaintiffs, rather than having multiple production lines, the invention puts the process together into an in-line process. Plaintiffs concede, however, that “in-line” does not appear in the claims or in the prosecution history. *Markman* Hr’g, Tr. 22:23–24, Jan. 29, 2015, ECF 52.

The portions of the specification cited by Plaintiffs do not amount to a clear disclaimer that would require a departure from the plain meaning of the term. *See CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). The claims also do not reveal that the alleged invention is directed only to an in-line process. Indeed, while the term “in-line” appears twice in the specification, the specification never uses the phrase “in-line process” and there is no clear meaning or guidance concerning the meaning of “in-line” in the specification. Much of Plaintiffs’ arguments and figures in the claim construction briefing and hearing on this issue have no support in the patent. Plaintiffs’ construction seeks to import a perceived limitation from the

specification into the claims. “[I]t is improper to read a limitation from the specification into the claims.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 903 (Fed. Cir. 2004) (citing *Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 345 F.3d 1318, 1327 (Fed. Cir. 2003); *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1343 (Fed. Cir. 2001)). The Court must “interpret claims ‘in view of the specification’ without unnecessarily importing limitations from the specification into the claims.” *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003); *accord Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204–05 (Fed. Cir. 2002). Therefore, the Court rejects Plaintiffs’ insertion of the phrase “in an in line process.” Defendant’s construction of “next in order after polymerization” is also rejected, as it attempts to place a meaning on the easily understood term of “following,” but also impermissibly requires it to be “next in order.” “Following” is an easily understood term and does not need construction.

The final portion of the phrase is “without first pelletizing the pelletizable polyolefin.” The plain meaning here is that pellets are not made. The alleged invention eliminates the first cooling step of making pellets. The parties do not dispute that “without first pelletizing the pelletizable polyolefin” can mean powder. Defendant’s concern is that the jury will not understand that it includes powder. Defendant’s proposed construction, however, which includes “other non-pellet forms” is unnecessary and merely provides examples of non-pellets. The term should be given its plain and ordinary meaning.

The Court rejects Plaintiffs’ and Defendant’s proposed constructions. Instead, the Court construes “while minimizing cross-linking, . . . following polymerization without first pelletizing the pelletizable polyolefin” to have its plain meaning. Because this resolves the dispute between the parties, the term requires no further construction. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed

meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”); *see also O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.”) (citing *U.S. Surgical*, 103 F.3d at 1568).

b. “improved” (Claims 1 and 17)

Term	Plaintiffs’ Proposed Construction	Defendant’s Proposed Construction
“improved”	No construction required; plain and ordinary meaning	“having better optical properties”

Plaintiffs argue that this term, appearing only in the preamble to the claims, needs no construction because the preamble of the asserted claims is not limiting, the specification contains no special definition or lexicography that changes the plain and ordinary meaning of this term, and the term “improved” does not affect the claim language. More specifically, Plaintiffs submit that it “does not recite essential structure or give necessary meaning to the remainder of the claim language.” ECF 38, p. 22. At the hearing, Plaintiffs did not dispute that the term includes optical improvements, but asserted that it does not have to be an optical improvement. It could be any of the other factors mentioned in the patent, including physical improvement, optical improvement, less expense, and less degradation. *Markman* Hr’g Tr. 65:22–25, Jan. 29, 2015, ECF 52; *see also* ‘163 Patent, col. 4, ll. 1–9.

Defendant asserts that “improved” is limiting because it describes and provides an antecedent basis for the polyolefin-based adhesive resin in Claims 1 and 17. The term “polyolefin-based adhesive resin” appears in both the preamble and the body of Claims 1 and 17. Defendant further argues that its construction of “improved” as “having better optical properties”

is consistent with the specification. Defendant points to four places in the specification that refer to better optical properties:

- “A method for producing polyolefin-based adhesive resins having improved physical and optical properties and the improved adhesive resins thereby produced ...” ‘163 Patent, Abstract.
- “Another object of this invention is to provide a process for producing polyolefin-based adhesive resins that improves properties, such as optical properties in thin films of the produced adhesive resin as compared to polyolefin-based adhesive resins produced by heretofore conventional processes.” ‘163 Patent, col. 2, ll. 33–38.
- “Polyolefin-based adhesive resins produced according to the invention have less degradation, less crosslinking and better (white) color than conventional polyolefin-based adhesive resins having more extensive heat histories.” ‘163 Patent, col. 4, ll. 1–4.
- after describing five tests, the specification explains “[t]he above tests demonstrate the improvements in the reduction of imperfections and degradation upon producing polyolefin-based adhesive resins in accordance with the process of the present invention, as well as the improvement in the optical properties of the films of the adhesive, as compared to polyolefin-based adhesive resins produced according to heretofore known conventional methods.” ‘163 Patent, col. 8, ll. 11–18.

Defendant stated at the hearing that it does not oppose adding physical properties to the meaning of the term, but argued that the meaning requires an improvement to “at least optical properties.” *Markman* Hr’g Tr. 61:23–24, 65:22, Jan. 29, 2015, ECF 52.

Whether a preamble will be treated as a limitation of the claims is “determined by the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history.” *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1572-73 (Fed. Cir. 1996). A preamble is generally found to be limiting if it is “ ‘necessary to give life, meaning, and vitality’ to the claims.” *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999) (quoting *Kropa v. Robie*, 38 CCPA 858, 187 F.2d 150, 152 (1951)). In addition, “dependence on

a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention.” *Catalina Marketing Int’l, Inc. v. Coolsavings, com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (citing *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620 (Fed. Cir. 1995)). If the patentee “defines a structurally complete invention in the claim body and uses the preamble only to state the purpose or intended use for the invention,” however, the preamble is not limiting. *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997).

The use of “improved” in the preamble is not a limitation. Nothing in the body of the claim refers to or clarifies the term “improved.” In addition, there is nothing showing that the term is necessary or provides essential structure or life to the claim. Instead, the body of the claim defines a structurally complete invention. The preamble merely sets forth the intended purpose of the claimed method and should not be given a limiting meaning.

Even if the preamble and/or the term “improved” is a limitation, Defendant’s arguments fare no better. In addition to optical improvements, the specification discloses multiple non-optical improvements such as physical and cost improvements. For example, the specification discloses adhesive resins with “improved physical . . . properties,” “less degradation,” “less crosslinking,” “less gels,” a “reduction of imperfections,” and that are less expensive to manufacture. ‘163 Patent, Abstract; col. 4, ll. 1-9; col. 4, ll. 8-10. Another object of the alleged invention that the specification discloses is “to provide an improved process for producing polyolefin-based adhesive resin that reduces the time, energy and equipment required to produce the adhesives as compared to conventional processes for such production.” ‘163 Patent, col. 2, ll. 39–43. The specification does not support construction of the term “improved” to mean only

“having better optical properties” or “at least optical properties” as proposed by Defendant. The Court rejects Defendant’s construction as an impermissible limitation.

The term “improved” is simple and readily understood to the jury and it should have its plain and ordinary meaning. Because this resolves the dispute between the parties, the term requires no further construction. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362.

c. “adhesive resin” (Claims 1, 2 and 17)

Term	Plaintiffs’ Proposed Construction	Defendant’s Proposed Construction
“adhesive resin”	No construction required; plain and ordinary meaning	“tie-layer resins used to bond materials together that would otherwise have poor adhesion to each other”

Plaintiffs argue that this term is self-evident to a person of ordinary skill in the art as it is used in the asserted claims and it does not need construction. Plaintiffs contend that the specification and prosecution history did not deviate from this meaning or provide another definition. According to Plaintiffs, the ‘163 Patent describes conventional adhesive resins, but does not limit the invention solely to conventional resins. Plaintiffs deny that the prosecution history gives rise to a clear, unmistakable disclaimer that would limit the claimed invention to a sub-class of tie-layer adhesive resins. Plaintiffs submit that a person of ordinary skill in the art would understand the claims to cover a variety of adhesive resins.

Defendant argues that the prosecution history reveals that the applicant repeatedly disclaimed the prior art that did not have the adhesive properties of the alleged invention for bonding to dissimilar materials, and stated that the disclosed adhesive resin in the invention was

directed to tie layer adhesives. Defendant asserts that Plaintiffs cannot claim a broader scope here than was represented to the USPTO to overcome prior art.

At the hearing, the parties focused the argument on whether the term is limited to resins bonding materials together or can include bonding to a single substrate, such as a coating. The claim language and specification support finding that “adhesive resin” contemplates both bonding to materials and bonding materials together. The specification provides that “[c]onventional polyolefin-based adhesive resins for bonding to or bonding together polyolefins and polar materials such as nylon, ethylene vinyl alcohol copolymer, metals and the like, are made using multiple step processes.” ‘163 Patent, col. 1, ll. 16–19 (emphasis added). The specification also mentions that “[t]he polyolefin-based, grafted copolymer adhesive resin obtained by the process of the present invention is particularly useful in a variety of applications, particularly for bonding to materials or bonding materials together . . .” ‘163 Patent, col. 4, ll. 10–13 (emphasis added). The independent claims do not provide clarification but several dependent claims describe bonding the adhesive to one substrate. *See* ‘163 Patent, col. 9, ll. 13–15 (“14. A fabrication process comprising bonding a polyolefin-based adhesive resin producing according to claim 1 to a substrate.”); col. 10, ll. 29–31 (“29. A fabrication process comprising bonding a polyolefin-based adhesive resin produced according to claim 17 to a substrate.”); and col. 10, ll. 41–43 (“31. A fabrication process comprising bonding a polyolefin-based adhesive resin produced according to claim 28 to a substrate.”). Overall, the specification and claims support Plaintiffs’ position.

Defendant’s proposed construction requires dual substrates bonding together and forecloses resins bonding to a single substrate. Defendant’s construction is not consistent with the specification or claims. The dependent claims and the specification both support a

conclusion that “adhesive resin” includes bonding to a single substrate in addition to bonding materials together. Defendant’s arguments are largely based on the prosecution, and Defendant points to several places in the prosecution history stating that the resins are used to bond “materials together that otherwise would have poor adhesion to each other.” ECF 43, p. 27. The prosecution history, however, does not expressly disclaim the use of single substrate bonds. Further, Defendant’s proposed term of “tie-layer” is not found in the claims or specification, has an unclear meaning, and is not necessary. That the prosecution history suggests an adhesive may be used to bond materials that similar or dissimilar or references a tie-layer adhesive does not expressly disclaim the use of single substrate bonds as argued by Defendant. To establish a prosecution history disclaimer, the prosecution history must show that the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during prosecution to obtain claim allowance. *Middleton Inc. v. 3M Co.*, 311 F.3d at 1388. There is no such disclaimer in this instance to foreclose single substrate bonds.

The Court therefore construes “adhesive resin” to mean “resins for bonding to materials or bonding materials together.”

d. “heated mixing device”

Term	Plaintiffs’ Proposed Construction	Defendant’s Proposed Construction
“heated mixing device”	No construction required; plain and ordinary meaning	“mixing device with heat applied during mixing”

Plaintiffs argue that this term needs no construction because “heated mixing device” is evident to one of ordinary skill in the art and the intrinsic record did not deviate from the ordinary meaning of the term. Plaintiffs assert that a person of ordinary skill would understand the ‘163 Patent to encompass a heated mixing device where the necessary heat may have already

been applied prior to mixing or where the heat is generated during the mixing itself. The specification discloses, for example, that a “heated extruder” may be used to accomplish the claimed heated mixing and that, in a preferred embodiment in the form of test runs, “LLDPE powder and the graft copolymer were heated to a temperature of approximately 400–450 degrees F and subjected to shear mixing.” ‘163 Patent at 5:67–6:3. Plaintiffs contend that Defendant’s construction, requiring heat applied during mixing, improperly narrows the meaning of the phrase.

Defendant argues that Plaintiffs’ construction improperly renders claim language superfluous, ignores the context in which the term is used, and improperly rewrites the claims. Plaintiffs’ construction that encompasses heat generated during the shear mixing process would render “heated mixing device” superfluous because the claim specifies both shear mixing and a heated mixing device. Defendant contends that the specification teaches that heat must be applied during mixing. Specifically, Defendant points to three places in the specification:

- “The pelletized polymer or polymers are next mixed with graft and heated to above the melting point of the components under high shear. *A heated extruder may be used to accomplish the latter step*, and the melt mixed product can be recovered in the form of pellets.” ‘163 Patent, col. 1, ll 60–64 (emphasis added).
- The process comprises polymerizing an olefin . . . and mixing the polymerization product with a graft and either with or without another component . . . *in a heated extruder or other heated mixing device at a temperature above the melting point of the components* to obtain the desired grafted polyolefin-based adhesive resin. ‘163 Patent, col. 3, ll. 13–25 (emphasis added).
- “The process comprises polymerizing an olefin, mixture of olefins or mixture of olefins and other monomers, where preferably the olefin or olefins have from about 2 to 8 carbon atoms, for example by polymerizing at least one olefin monomer mixture using a conventional reactor process, and mixing the polymerization product with a graft and either with or without another component, such as an adhesion promoting resin, preferably elastomer, and more preferably a thermoplastic elastomer, or a metallocene catalyzed polyolefin, *in a heated extruder or other heated mixing device at a temperature above the melting*

point of the components to obtain the desired grafted polyolefin-based adhesive resin.” ‘163 Patent, col. 3, ll. 12–17 (emphasis added).

Claims 1 and 17 recite: “b. mixing with shear mixing, while minimizing cross-linking, at least 50% by weight based on the polyolefin-based adhesive resin of the polymerization product following polymerization without first pelletizing the pelletizable polyolefin with at least one graft polymer or copolymer in a heated mixing device at temperature above the melting point of the components.” ‘163 Patent, col. 8, ll. 32–38; col. 9, ll. 44–50. The use of the term “heated mixing device” in the context of the claims does not describe heated materials passing through a mixing device or heat generated by shear mixing. Instead, the use of that term implies active heat applied to the mixing device.

Construing the term as including heat that has already been applied to the materials prior to entry into the device or that is generated merely by mixing would render “heated” in “heated mixing device” unnecessary. The well-established rule is that “claims are interpreted with an eye toward giving effect to all terms in the claims.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). The claim refers to a “heated mixing device,” which strongly implies that not all mixing devices are heated. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). Further, the fact the claim separately requires shear mixing supports Defendant’s construction that a heated mixing device is not the result of simply mixing. However, the Court is not convinced that Defendant’s proposed requirement of applied heat *during mixing* is necessary, as the claim language potentially allows a situation where the heated mixing device is heated prior to entry of materials into the device.

Plaintiffs’ assertion that the plain and ordinary meaning of “heated mixing device” includes heat applied prior to the mixing device or heat generated by mixing is not supported by

the claim language or the specification. The Court therefore construes “heated mixing device” to mean “mixing device with applied heat.”

CONCLUSION

For the foregoing reasons, the Court hereby **ADOPTS** the claim constructions as set forth above. For ease of reference, the Court’s claim interpretations are set forth in a table in Appendix A.

So ORDERED and SIGNED this 23rd day of June, 2015.



K. NICOLE MITCHELL
UNITED STATES MAGISTRATE JUDGE

APPENDIX A

Terms, Phrases, or Clauses	Court's Construction
“while minimizing cross-linking, ... following polymerization without first pelletizing the pelletizable polyolefin”	plain meaning
“improved”	plain meaning
“adhesive resin”	“resins for bonding to materials or bonding materials together”
“heated mixing device”	“mixing device with applied heat”